

We Claim:

1. An article of footwear comprising:
an upper for covering the top part of a wearer's foot;
a midsole/outsole secured to said upper for covering a sole part of the wearer's foot and
having an inside face for contacting said sole part and an outside face for interfacing
with an underlying surface;
said midsole/outsole having a heel region corresponding to a wearer's heel and a
convex curvature to said outer face in said heel region.
2. An article of footwear as claimed in claim 1 wherein:
said convex curvature has a transverse radius of curvature approximately coincident
with a long axis of rotation of said wearer's foot, being alignable to the centre of radius
of the heel counter region of said article of footwear.
3. An article of footwear as claimed in claim 2 wherein:
said convex curvature has a longitudinal radius of curvature approximately coincident
with the sagittal plane centre of mass of the calcaneus of said wearer's foot.
4. An article of footwear comprising:
an upper for covering a top of a wearer's foot;
a midsole/outsole secured to said upper for covering a sole of a wearer's foot and
having an inside face adjacent said sole and an outside face for interfacing with an
underlying surface;
said midsole/outsole having a region of enhanced flexibility corresponding to a

metatarsal region of a person's foot defined by a medial posterior boundary not less than 70% of the foot's length, a medial anterior boundary not more than 80% of the foot's length and a lateral anterior boundary not more than 70% of the foot's length.

5. An article of footwear as claimed in claim 4 wherein:
said region enhanced flexibility is provided by transversely extending grooves formed in said midsole/outsole in said region.
6. An article of footwear as claimed in claim 5 wherein:
at least one of said upper and said midsole/outsole are provided with biasing means acting to urge said region of flexibility toward a position corresponding to a dorsiflexed state.
7. An article of footwear as claimed in claim 4, 5 or 6 wherein:
said midsole/outsole has a heel region corresponding with a wearer's heel and a convex curvature to said outer face in said heel region.
8. An article of footwear as claimed in claim 7 wherein:
said convex curvature has a transverse radius of curvature approximately coincident with a long axis of rotation of said wearer's foot.
9. An article of footwear as claimed in claim 8 wherein:
said convex curvature has a longitudinal radius of curvature approximately coincident with a sagittal plane centre of mass of a calcaneus of a wearer's foot.

10. An article of footwear as claimed in claim 1, 2, 3, 4, 5 or 6 wherein:

said midsole/outsole arrangement further has a substantially dome shaped catalyst for interfacing with the plantar aspect of a human foot;

said catalyst having an apex for aligning with a target area within said foot, said target area defined by the point of articulation of the lateral cuneiform, cuboid and navicular bones of the foot, to permit uninhibited triplanar pivoting of the foot about the target area;

said catalyst displaying compression and rebound properties such that said catalyst is capable of applying an upwardly directed pressure to stimulate the Golgi tendon organ in said foot in response to downward pressure on said catalyst by said foot, and, said catalyst has a maximum height of said apex of from 1% to 5% of the length of said foot.

11. An article of footwear as claimed in claim 9 wherein:

said midsole/outsole arrangement further has a substantially dome shaped catalyst for interfacing with the plantar aspect of a human foot;

said catalyst has an apex for aligning with a target area within said foot, said target area being defined by the point of articulation of the lateral cuneiform, cuboid and navicular bones of the foot, to permit uninhibited triplanar pivoting of the foot about the target area;

said catalyst displaying compression and rebound properties such that said catalyst is capable of applying an upwardly directed pressure to stimulate the Golgi tendon organ as of said foot in response to downward pressure on said catalyst by said foot; and, said catalyst has a maximum height of said apex of from 1% to 5% of the length of said foot.

12. An article of footwear as claimed in claim 11 wherein:
said catalyst has a receptacle for removably accommodating a resilient member for causing said catalyst to apply said upwardly directed pressure.
13. An article of footwear as claimed in claim 12 wherein:
said receptacle has sidewalls perpendicular to said outer face of said midsole/outsole for interfacing with vertical sides of said resilient member to oppose horizontally directed forces.
14. An article of footwear as claimed in claim 10 wherein:
said catalyst has a receptacle for removably accommodating a resilient member for causing said catalyst to apply said upwardly directed pressure.
15. An article of footwear as claimed in claim 14 wherein:
said receptacle has sidewalls perpendicular to said outer face of said midsole/outsole for interfacing with vertical sides of said resilient member to oppose horizontally directed forces.
16. An article of footwear as claimed in claim 1,2,3,4,5 or 6 wherein:
said heel region includes a cushioning region corresponding to said wearer's calcaneous, said cushioning region being more easily compressible than a remainder of said midsole/outsole arrangement surrounding said heel region.
17. An article of footwear as claimed in claim 11 wherein:

said heel region includes a cushioning region corresponding to said wearer's calcaneous, said cushioning region being more easily compressible than a remainder of said midsole/outsole arrangement surrounding said heel region.

18. An article of footwear as claimed in claim 15 wherein:
 said heel region includes a cushioning region corresponding to said wearer's calcaneous, said cushioning region being more easily compressible than a remainder of said midsole/outsole arrangement surrounding said heel region.
19. An article of footwear as claimed in claim 18 wherein:
 said outside face has a heel portion extending away from said inside face and having a convex curvature with a radius of curvature coincident with the axes of rotation of a calcaneous of a wearer's foot.
20. An article of footwear as claimed in claim 19 wherein:
 said outside face has a forefoot portion extending away from said inside face and having a convex curvature with a radius of curvature coincident with a long axis centre of rotation of a wearer's foot.
21. An article of footwear as claimed in claim 20 wherein:
 said cushioning region is located between said inside face and said outside face and said convex curvature of said heel region flattens when supporting the weight of a wearer.

22. An article of footwear as claimed in claim 21 wherein:
- a forefoot cushioning region corresponds to said convex curvature of said forefoot region;
- said forefoot cushioning region is more easily compressible than the surrounding midsole/outsole; and said convex curvature of said forefoot region flattens when supporting the weight of a wearer.

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